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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/782,464

02/19/2004

Alistair J. Price

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21398 7590 06/19/2007  
DICKIE, McCAMEY, & CHILCOTE, P.C.  
ATTN: DARREN E. WOLF, ESQUIRE  
400 TWO PPG PLACE  
PITTSBURGH, PA 15222

EXAMINER

TRAN, DZUNG D

ART UNIT

PAPER NUMBER

2613

MAIL DATE

DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Office Action Summary**

Application No.

10/782,464

Applicant(s)

PRICE, ALISTAIR J.

Examiner

Dzung D. Tran

Art Unit

2613

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 29 March 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

**DETAILED ACTION**

***Specification***

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Feng et al. US Publication no. 2002/0181832.

Regarding claim 1, Feng discloses an optical system comprising:

an optical filter including a band filter (e.g., a first filter) configured to filter at least one optical channel and a periodic filter (e.g., a second filter) configured to receive, filter, and shape the at least one optical channel from said band filter and provide a single filtered, shaped optical channel (page 1, paragraph 0010, page 10, claim 18).

Feng differs from claim 1 of the present invention in that he does not specifically disclose the optical transmitting end comprises an optical transmitter and the optical receiving end comprises an optical receiver for receiving at least the single filtered shaped optical channel. However, the optical communication system having an optical transmitting end comprises an optical transmitter and an optical receiving end comprises an optical receiver is well known in the art. Thus, it would have been obvious that the optical system of Feng also comprising optical transmitting end comprises an optical transmitter and the optical receiving end comprises an optical

receiver in order to transmit the optical signal at the transmitting end and receive the optical signal at the receiving end.

Regarding claim 2, Feng discloses wherein said band filter (e.g., a first filter) is tunable over at least a portion of the optical system wavelength spectrum (page 4, paragraphs 0070).

Regarding claim 3, Feng discloses wherein said band filter (e.g., a first filter) includes at least one of fiber Bragg gratings, Fabry-Perot filters and thin film filters (page 5, paragraph 0076).

Regarding claims 4 and 5, Feng discloses wherein said periodic filter (e.g., a second filter) includes at least one of Mach-Zehnder and Michelson interferometric filters (page 5, paragraph 0076).

Regarding claim 6, Feng discloses wherein said band filter (e.g., a first filter) is a tunable Fabry-Perot filter and said periodic filter (e.g., a second filter) is Mach-Zehnder filter (page 5, paragraph 0076).

Regarding claim 7, Examiner take an official notice that periodic filter is a double pass Mach-Zehnder filter is well recognized in the art.

Regarding claims 8 and 9, an optical transmitter that transmit information over two channels, each channel being at a different wavelength is well known in the art (Examiner take an official notice that the well known tunable optical transmitter is perform the same function). Furthermore, two or more optical filters that perform the same function as the optical filter of Feng discloses in claim 1 is merely a duplicate parts for a multiplied effect. Therefore, it would have been obvious to a person of

ordinary skill in the art to include the tunable optical transmitter for transmitting the information over two channels and two optical filters each including a band filter configured to filter at least one optical channel and a periodic filter configured to receive the at least one optical channel from said band filter and provide a single filtered optical channel and shape the bandwidth of the single filtered, shaped optical channel and optical receiver is one of a plurality of optical receivers, each configured to receive and convert the two filtered, shaped optical channels into electrical signals and combined the two electrical signals into one electrical signal from at least one of said optical filters. One of ordinary skill in the art would have been motivated to do that in order to transmit and receive a plurality optical channels over a WDM optical system.

Regarding claims 10-13, Feng discloses a method/apparatus of an optical receiver comprising:

an optical filter including a band filter (e.g., a first filter) configured to filter at least one optical channel and a periodic filter (e.g., a second filter) configured to receive, filter, and shape the at least one optical channel from said band filter and provide a single filtered, shaped optical channel (page 1, paragraph 0010, page 10, claim 18).

Feng differs from claims 10-13 of the present invention in that he does not specifically disclose the optical receiving end comprises an optical receiver that includes a photodiode configured to receive the single filtered, shaped optical channel and convert it into an electrical signal. However, an optical receiver that includes a photodiode is well known in the art. Thus, it would have been obvious that optical

receiving end comprises an optical receiver that includes a photodiode in order to receive the optical signal at the receiving end.

Regarding claim 14, whether or not the system comprises a plurality of transmitters and a plurality of receivers is merely a duplicate parts for a multiplied effect. Therefore, it would have been obvious to a person of ordinary skill in the art to include a plurality of transmitters and a plurality of receivers for transmitting and receiving the information over the fiber. One of ordinary skill in the art would have been motivated to do that in order to transmit and receive a plurality optical channels over a WDM optical system.

Regarding claim 15, since the present invention does not disclose the advantage for the optical filter and the receiver are included in the same module. Thus, whether the optical filter and the receiver are included in the same module or the optical filter located close to the receiver is obviously an engineering design choices.

Regarding claim 16, since the present invention does not disclose the advantage of the receiver module having only the periodic filter is included with the receiver or the receiver module having the band filter and the periodic filter is included with the receiver. Thus, whether the receiver module having only the periodic filter is included with the receiver or the receiver module having the band filter and the periodic filter is included with the receive is merely an engineering design choices.

Regarding claim 17, Feng discloses band filter F1 is an arrayed waveguide (page 5, paragraph 0076).

Regarding claims 18 and 19, it would have been well known in the art that the periodic filter has a periodic pass band that is adjustable via a controller and the optical system comprise an optical amplifier.

Regarding claim 20, Feng discloses the band filter has a bandwidth less than the period of the period filter (page 1, paragraph 0016-0017).

Regarding claims 21 and 22, Feng discloses the periodic filter decreases the amount of optical noise and band pass filter is configured to separate one channel from a plurality of optical channel and the periodic filter filters optical noises from the optical channel (page 1, paragraph 0005-0007).

### ***Response to Arguments***

3. Applicant's arguments with respect to claims 1-22 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dzung D Tran whose telephone number is (571) 272-3025. The examiner can normally be reached on 9:00 AM - 7:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Vanderpuye, can be reached on (571) 272-3078. The fax phone

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number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Dzung Tran  
06/16/2007

  
DZUNG TRAN  
PRIMARY PATENT EXAMINER